

IN THE CLAIMS

1. (currently amended) A permanent magnet brushless motor comprising:

a stator comprising one or more phases, wherein at least one given phase of the stator includes a plurality of winding sections;

a rotor rotatably mounted relative to the stator and comprising at least one permanent magnet; and

a winding divided into a plurality of sections and switch means comprising a plurality of switching devices for simultaneously selectively connecting all of the winding sections of the given phase winding in one of a plurality of different configurations, wherein said switching devices are disposed at opposite ends of each winding section and are arranged to connect each winding section is connected in series and/or parallel with all other winding sections of the given phase winding.

2. (currently amended) A permanent magnet brushless motor as claimed in claim 1, wherein:

in which the switch means is arranged to connect all of the winding sections of the given phase in parallel.

3. (currently amended) A permanent magnet brushless motor as claimed in claim 1, wherein:

in which the switch means is arranged to connect all of the winding sections of the given phase in series.

4. (currently amended) A permanent magnet brushless motor as claimed in claim 1,

wherein:

~~in which~~ the switch means is arranged to connect some of the winding sections of
the given phase in parallel, with at least one other winding section of the given phase
being connected in series with the parallel-connected winding sections.

5. (currently amended) A permanent magnet brushless motor as claimed in claim 1,

wherein:

~~in which~~ the voltage applied to the winding sections of the given phase is pulse-
width modulated.

6. (currently amended) A permanent magnet brushless motor as claimed in claim 5,

wherein:

~~in which~~ the voltage applied to the winding sections of the given phase is pulse-
width modulated by selectively energising said switch means.

7. (currently amended) A permanent magnet brushless motor as claimed in claim 1,

further comprising:

means for repeatedly actuating said switch means to change said winding sections
between different connection configurations to obtain a motor characteristic intermediate
that of the connection configurations between which the winding sections ~~windings~~ are
repeatedly switched.

8. (currently amended) A permanent magnet brushless motor as claimed in claim 1,

further comprising:

control means for actuating the switch means to vary the connection configuration of the winding sections ~~connections~~ whilst the motor is running, in accordance with predetermined operating parameters.

9. (currently amended) A permanent magnet brushless motor as claimed in claim 8,

wherein:

~~in which~~ the control means is adapted ~~able~~ to vary the connection configuration of the winding sections ~~connections~~ whilst the motor is running, in accordance with the output of means for sensing an operating parameter of the motor.

10. (currently amended) A permanent magnet brushless motor as claimed in claim 8,

wherein:

~~in which~~ the control means is adapted ~~able~~ to vary the connection configuration of the winding sections ~~connections~~ whilst the motor is running, in accordance with the output of means for sensing an operating parameter of the article being driven by the motor.

11. (currently amended) A permanent magnet brushless motor as claimed in claim 8,

wherein:

~~in which~~ the control means is adapted ~~able~~ to vary the connection configuration of

the winding sections ~~connections~~ of a conducting phase whilst the motor is running, in accordance with the back emf measured across ~~a the winding of~~ a non-conducting phase or a winding section thereof.

12. (currently amended) A permanent magnet brushless motor as claimed in claim 8, wherein:

~~in which~~ the control means is adapted ~~able~~ to vary the connection configuration of the winding sections ~~connections~~ whilst the motor is running, in accordance with time or an operating cycle or program.

13. (currently amended) A permanent magnet brushless motor as claimed in claim 8, wherein:

~~in which~~ the control means comprises means for manually changing the connection configuration of the winding sections ~~connections~~.

14. (currently amended) A permanent magnet brushless motor as claimed in claim 1, wherein:

~~in which~~ all of the winding sections of the given phase ~~or each winding~~ are wound in parallel to each other.

15. (currently amended) A permanent magnet brushless motor as claimed in claim 1, wherein:

~~in which~~ the winding sections of the given phase ~~winding~~ are connected such that

current flows through each winding section in the same direction.

16. (currently amended) A permanent magnet brushless motor as claimed in claim 1,
wherein:

~~in which~~ one of the winding sections of the given phase winding comprises a
different number of turns from another winding section of the given phase.

17. (currently amended) A permanent magnet brushless motor as claimed in claim 1,
wherein:

~~in which~~ one of the winding sections of the given phase winding comprises a
conductor having a different cross-sectional area than the conductor of another winding
section of the given phase.